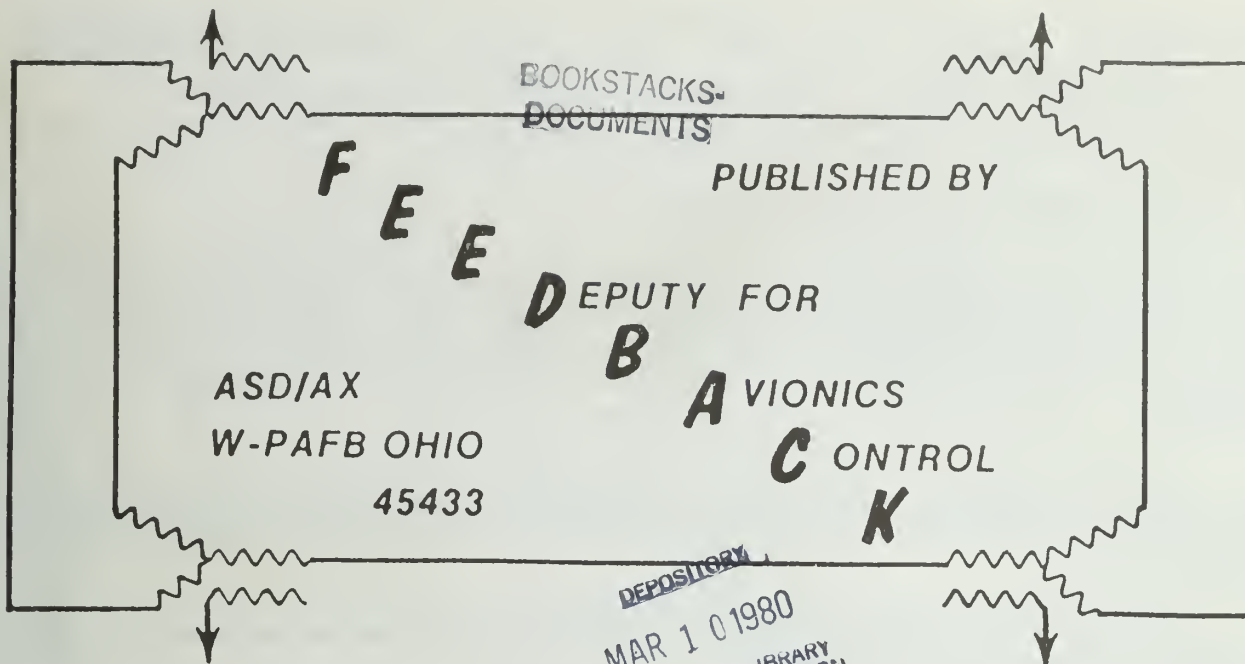




AFRP 800-1

Vol II, No

UNIV. OF ILL. LIBRARY
AT URBANA-CHAMPAIGN

March 1980

AVIONICS DATA UTILIZATION SYSTEM (ADUS)

The Deputy for Avionics Control (DAC) is currently developing an Avionics Data Utilization System (ADUS). This computerized system will provide capabilities to replace those which are presently done manually or not done at all due to the amount of work involved. By placing our avionics data in a computerized data system, we will be able to tell ADUS to do such things as:

- Provide a list of all aircraft that carry the ARC-164.
- List the five sub-systems with the lowest MTBF on the C-135.
- Answer the question: "What is the current monthly production rate for the ARC-164?"
- Show MTBFs of all TACAN receivers in all aircraft.
-- Show support cost per aircraft.
- List all the avionics existing and/or planned on the F-16A.

Besides providing an information query capability, ADUS will generate, when told, an Avionics Planning Baseline document and provide support (lists, graphs, charts, etc.) for the Avionics Master Plan.

Authority to publish this periodical automatically expires in May 1981 unless its continuance is authorized by the approving authority prior to that date.

Distribution: F



Development will be accomplished primarily on a contractor's IBM 370/3031 computer (May 80). The systems will then be placed on a PDP 11/60 computer system at the ASD computer center (Sep 80). For information, please contact Nancy Clements, Autovon 785-5694, Commercial (513) 255-5694.

AVIONICS PLANNING BASELINE (APB)

The APB was updated, published, and distributed in October 1979. The information contained in the document is currently being incorporated into a data base. This data base will be a subset of the data base in the Avionics Data Utilization System (ADUS).

A questionnaire relating to the APB to determine utilization and desired changes or enhancements was passed out during the October 1979 Avionics Planning Conference. The most significant results were:

- The document is widely used, particularly by the planning community.
- The level of accuracy is sufficient for budgeting and planning purposes.
- An annual publication (1 October) would satisfy the requirement.
- Cost, reliability and maintainability data are the most desired additional information.

Complete results of the questionnaire or information on the APB can be requested from ASD/AXP, Mr. Logan, Autovon 785-5694, Commercial (513) 255-5694.

An effort is underway to obtain cost, reliability and maintainability information with which the APB will be enhanced once a systematic approach for information maintenance is accomplished.

AVIONICS MASTER PLAN

The USAF Avionics Master Plan (AMP) has been coordinated with the MAJCOMs and submitted to HQ USAF for their concurrence prior to printing and distribution. The expected release date is Feb 80.

Initial preparation of the 1980 version of the AMP is underway with distribution for coordination scheduled for July 1980. This AMP will have significant changes in format and content as a result of suggestions received during the coordination cycle for the 1979 version. For additional information, contact Lt Col Ewers or Major Loofboro, ASD/AXPP, Autovon 785-5694, Commercial (513) 255-5694.

In the December issue we reported that a draft AFSC/AFLC Supplement to AFR 800-28 was being staffed in both Commands. The draft is now in the formal coordination cycle at HQ AFSC and HQ AFLC. We expect the coordination cycle to be completed late this month. Printing and distribution will be on a routine priority so the supplement will likely be available in the late spring. AFSC and AFLC avionics managers and organizations are reminded, however, that interim guidance was issued by HQ AFSC/XR message 181850Z Dec 78, subject: Review of Avionics Acquisition and Modification Programs by the Deputy for Avionics Control, and HQ AFLC/XR letter, 18 Jan 79, same subject. (Bob Gehman, ASD/AXA, Autovon 785-5385, Commercial (513) 255-5385)

NEW AVIONICS STANDARDIZATION INITIATIVE--STANDARD CENTRAL AIR DATA COMPUTER (SCADC)

A number of air data computer systems in both USAF and USN aircraft are approaching the end of their service life and are being considered for retrofit. Recent AFLC POM inputs and system manager actions indicate that additional unique air data computers are being proposed to satisfy retrofit needs. This combination of activities presents an "opportunity window" for acquiring a SCADC that can be used to retrofit current aircraft as well as for forward fit of future aircraft.

Before any retrofit decision and subsequent HQ USAF funding support and program direction is received, a cost benefit study must be accomplished. Thus, we have organized a study team to address USAF air data computer support and retrofit needs. We are initiating this study as an opportunity to acquire a standardized CADC which adapts to several USAF/USN aircraft and which offers improved supportability, reduced LCC, and improved air data accuracies. Our goals are to consolidate the joint services air data requirements, to recommend an optimum acquisition strategy, and to conserve USAF development and modification funds. We have received the support of HQ AFLC/LOW and have been working with NAVAIR on the contractual aspects of a joint service program. The SCADC initiative was briefed to the HQ AFSC SYSTO (Systems Officer) on 6 Dec 79 and to the OC-ALC modification manager on 13 Dec 79.

Currently, we are preparing a joint performance specification which will be distributed to government and industry personnel for review. We are examining current CADC support costs for the B-52, KC-135, C-5, C-141, F-4, and F-111 aircraft. Points of contact are: Capt Gary Rosing, ASD/AXA, Project Officer, Autovon 785-5385, Commercial (513) 255-5385 and Mr. Thomas Dickman, ASD/ENAID, Study Chairman, Autovon 785-3440, Commercial (513) 255-3440.

COMBINED ENVIRONMENT RELIABILITY TESTING (CERT)

During the October 1979 Avionics Planning Conference, the Test and Evaluation Panel formed a CERT subpanel to identify various paths to improve avionics system reliability and performance by providing cost effective and realistic combined environmental test techniques, procedures, and facilities. Their roadmap called for a "studies and analysis" approach before identifying the Air Force's future technical approach and investment strategy for CERT facilities.

We believe that the CERT concept is viable and essential to significantly improve performance and reliability of avionics systems. Therefore, we have decided to assume the leadership role in accomplishing these recommended CERT studies. We have asked personnel from the Avionics Laboratory to chair this effort and have contacted other organizations to act as qualified advisors.

The studies would first identify all existing combined environmental test facilities within USAF, DoD, and contractor plants. Another study would define needed standardized and/or specialized CERT facilities and the test requirements for various classes of avionics systems. Analyzing the results of these studies should lead to a recommended Air Force plan addressing CERT facilities expansion. We will work closely with the local CERT Working and Steering Groups to formulate this plan. Our study should commence during Feb 1980, and we hope to propose a "USAF Plan for CERT" to HQ USAF by Sep 1980.

Your assistance in identifying existing environmental test facilities and in identifying any special environmental test requirements for various categories of avionics equipment would be greatly appreciated. Points of contact are: Capt Gary Rosing, ASD/AXA, Project Officer, Autovon 785-5385, Commercial (513) 255-5385 and Mr. Richard Freeman, AFWAL/AARF, Study Chairman, 785-3050.

MIL-STD-1750 STATUS

The MIL-STD-1750 Users Group and the Control Board meetings were held at Ft Worth, Texas, 21-24 Jan 1980. Mr. Lou Urban, Mr. Dulai and Mr. Hwang from ASD/AX had attended the meetings.

- By-laws of the MIL-STD-1750 Users Group were discussed and approved by all members.

- Most issues of changes of standards and architecture which were discussed and recommended by the Users Groups for the Control Board consideration had unanimous votes. However, several issues were deferred for additional clarification. Consequently, a meeting of the Users Group and the Control Board to resolve these

issues is scheduled for 12, 13, and 14 Feb 80 at WPAFB, OH. It is planned that the outcome of all changed issues will be submitted on 18 Feb 1980 to HQ AFSC/XRF for final approval and reproduction. Thus MIL-STD-1750A should be baselined and established on 1 Mar 80.

● One of the first programs to benefit from the application of MIL-STD-1750A will be the LANTIRN program. The RFP that will be released will reflect a coordinated ASD position on MIL-STD-1750A, MIL-STD-1589A, and MIL-STD-1553B program requirements, and thus becomes the vanguard in Air Force standardization efforts. (Mr. S. R. Hwang, ASD/AXT, Autovon 785-5941, Commercial (513) 255-5941)

JOVIAL LANGUAGE CONTROL AGENT/LANGUAGE CONTROL FACILITY

ASD/AX has been working with ASD/AD and RADC/IS to develop a transition management plan for transferring the functions of the JOVIAL Language Control Agent (LCA) and the Language Control Facility (LCF) from RADC to ASD. A draft of the plan was presented to the JOVIAL Users Group and the Air Force Language Control Board during their scheduled meeting on 8, 9, and 10 Jan 80. Several side meetings of the top level management of RADC/IS and ASD/AX, conducted during the 8-10 Jan 80 JOVIAL meeting, have cleared many questions surfaced during the development of the transition plan. Based on agreement between ASD and RADC principals, and the recommendations of the Control Board, the plan is being completed.

It is anticipated that the transition of the LCA and LCF function will take place during the first quarter of FY81. Contact Mr. S.R. Hwang, ASD/AXT, Autovon 785-5941, Commercial (513) 255-5941, for further information.

COMMON MODULAR MULTIMODE RADAR (CMMR)

In a recent aerospace publication, an erroneous statement was made about the CMMR program. Contrary to that article, if a CMMR "fell into enemy hands," the entire force would not be jeopardized. Like most modern radars the CMMR would have a programmable signal processor (PSP) and other anti-jam features, both hardware and software, designed into the radar. The modular approach allows staggering/tuning of frequencies. It also provides flightline reprogrammable flexibility (PRF, waveforms, etc.) in the event any CMMR or portions thereof should ever fall into enemy hands. The article referred to an AF avionics source who obviously was not familiar with current state-of-the-art of US radars. (Mr. G. Van Oss, ASD/AXT, Autovon 785-5941, Commercial (513) 255-5941)

THE AVIONICS AND ARMAMENT PLANNING CONFERENCE

There are a number of changes in the mill for the conference as we have known it in the past. Those changes are designed to better integrate the planning of the two communities and to streamline the total conference procedure. All of the details are not yet worked out, but the following specific actions are underway. A matrix committee structure will evolve. An executive committee "EXCOM" consisting of MAJCOM chairmen for tactical, strategic, C³ and airlife mission areas will give a mission focus to the major avionics and armament issues. The EXCOM will meet at least three times annually with two of the meetings in Washington D.C. and one in the field. The latter will be an expanded EXCOM and will replace the conference as we have known it in the past. The existing panel structure will be compressed into four "implementation" or functional panels: Availability, Combat Effectiveness, Standardization, and Computer Resources. The old Test and Evaluation panel and Survivability panel will be merged into the other four "implementation" or functional panels along with the armament community. The functional panel chairmen will be free to hold as many panel and sub-panel meetings throughout the year as they deem necessary and the functional panel chairmen will be a part of the EXCOM. As these changing details unfold, your panel chairman and DAC Secretariat will be kept up to date. (Mr. Ricker, ASD/AXP, Autovon 785-5694, Commercial (513) 255-5694)

PROGRESS REPORT ON THE AN/AYK-15A GENERAL PURPOSE PROCESSOR

The following items have been delivered to the Avionics Lab, AFWAL/AAA, (hereafter called the Lab) for testing and integration.

- Two AN/AYK-15A general purpose processor prototypes developed in accordance with MIL-STD-1750 (Standard Air Force Computer Architecture Instruction Set). One was developed by Sperry-Univac and the other by Westinghouse. Both units passed all prototype verification testing at the contractor's plants with the lab's engineers witnessing the tests.

- The support system hardware for the AN/AYK-15A. This consists of a CRT and keyboard to access the computer's memory for debugging software.

On the Lab's DEC-10 mainframe, we will soon have the J73 compiler developed by Software Engineering Associates, Torrance, California, which will be targeted to MIL-STD-1750. Lab personnel have started to test the J73 compiler using the JOVIAL Compiler Verification System (JCVS). By March we should know the results of the validation exercise based on the quality of the JCVS test.

The significance of this is the lab will soon be able to write software from J73 to a 1750 machine and do it all as an in-house effort. The lab has high confidence that the schedule will be attained. They expect to encounter normal integration problems but should have both 1750 machines completely checked out by the end of February 1980.

This activity serves as prima facie evidence of MIL-STD-1750 hardware and MIL-STD-1589A software. Upon successful finalization of these tests, the Air Force will own J73 software hosted on the DEC-10 and targeted to 1750 hardware.

The Westinghouse prototype will be temporarily returned to the manufacturer on 1 Apr 80. The Sperry-Univac prototype will remain at the lab and may be available for use by interested system designers. On 1 Aug 80, the first of eight production units will be delivered. Organizations interested in utilizing one of the ten units (eight production and two prototype) may submit requests to ASD/AX. AFWAL/AAA and ASD/AX will make a joint determination whether or not to lend a unit, based upon the priority of the intended use, length of requested use, number of units available, and other such factors. (Contact Mr. Dulai, ASD/AXT, Autovon 785-5941, Commercial (513) 255-5941)

ITEMS FOR THE NEWSLETTER

Please remember this is your Newsletter and your inputs are solicited. Most of the items submitted in this issue (and previous issues) have been generated by ASD/AX. Although ASD/AX is a joint AFSC/AFLC organization, we vitally need other product division, air logistic center, and user inputs. If you are part of the avionics community and have items of general interest, send them to Mrs. Joan Blackburn, ASD/AX, WPAFB, OH 45433. For automatic distribution, contact your Publications Officer.

* * * * *

* * * * *

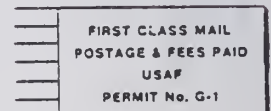
FEEDBACK is available for subscription sale. Subscription requests should be forwarded to: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Subscription costs are \$4.00 per year domestic and \$5.00 per year foreign. Single copy costs are \$1.35 domestic and \$1.70 foreign. FEEDBACK is published quarterly but inputs from contributing editors will be welcomed by the Deputy for Avionics Control at any time. We are continually interested in happenings or issues that would be of interest to the avionics world. Forward proposed articles to ASD/AX, Wright-Patterson AFB, Ohio, 45433, Attn: Mrs. Joan Blackburn.

* * * * *

* * * * *

ASD/AX
Wright-Patterson AFB, OH 45433

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300



FIRST CLASS